

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of:	NAKAYOSHI et al.	Examiner:	LAM, Cathy Fong Fong
Serial No.:	10/598,967	Confirmation No.:	2691
Filed:	July 11, 2007	Group Art Unit:	1784
Docket No.:	DC10031PCT/071051.00070		
Title:	METAL BASE CIRCUIT SUBSTRATE FOR AN OPTICAL DEVICE AND METHOD MANUFACTURING THE AFOREMENTIONED SUBSTRATE		

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**REPLY BRIEF**

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Dear Sir:

Subsequent to the mailing of an Examiner's Answer on December 23, 2010, Appellants now submit a Reply Brief in accordance with 37 CFR § 41.41 in response to the Examiner's Answer. Because this Reply Brief is being filed within two months of the Examiner's Answer, it is believed that no additional fees are due.

**REMARKS**

The Examiner maintains and consistently argues in the Examiner's Answer that the expressly claimed physical properties of the insulation layer are inherent in the silicone of the Examiner's primary reference, i.e., U.S. Pat. No. 5,116,472 to Wolter et al. (the '472 patent). In so doing, the Examiner has continued to ignore the necessary findings for supporting an inherency rejection under 35 U.S.C. § 102(b). Moreover, the Examiner has continued to improperly assert characteristic properties of various silicones, and the Examiner has failed to appreciate the plethora of physical properties obtainable from silicones.

Specifically, the Applicants noted in the Applicants' Brief on Appeal that silicones have vastly different physical properties contingent on many factors. This fact is well known in the art and is even true within but one subset of a particular cure mechanism (e.g. hydrosilylation-curable silicones, condensation-curable silicones, etc). This fact is even acknowledged and supported by the Examiner's own reference, i.e., the '472 patent, which describes silicones ranging from "colorless to bright-yellow." These silicones of the '472 patent have varying colors yet are produced from the exact same silicone cure mechanism and chemistry (see, e.g., Example 1 of the '472 patent). Despite the fact that the physical properties obtained from but one specific silicone chemistry are clearly different, the Examiner still maintains that these silicones inherently possess the instantly claimed transparency and light transmission. Not only has the Examiner disregarded the fact silicones have vastly different physical properties, but the Examiner has done so contrary to the specific requirements and findings relative to a rejection under § 102(b) based on inherency, as set forth in MPEP § 2112 and described in greater

detail immediately below.

In particular, “[t]he fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic.” (emphasis added) MPEP § 2112 (citing *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993)). Moreover, “[t]o establish inherency, the extrinsic evidence ‘must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.” (emphasis added) MPEP § 2112 (citing *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999)). Clearly, the fact a silicone of the ‘472 patent may possess the instantly claimed light transmittance is not enough to support a rejection under § 102(b) on the basis of inherency. To establish inherency under § 102(b), the silicone of the ‘472 patent must necessarily possess the instantly claimed transparency and light transmittance.

It appears from the Examiner’s Answer that the Examiner has mischaracterized the Applicants’ argument relative to the vast physical properties obtainable from silicones. Specifically, the Applicants previously noted that many factors, including cure conditions, reaction mechanism, substituents, starting components, etc. each impact physical properties of silicones. The Applicants also noted that this was true even within a subset of silicones relative to one particular reaction mechanism, e.g. condensation-curable silicones. The Examiner has failed to appreciate the Applicants’ arguments and silicone chemistry itself. For example, in the Examiner’s Answer, the Examiner notes

that the specification of the subject application states that the instantly claimed insulation layer may be formed from silicones cross-linkable by a condensation reaction. This is accurate. However, the Examiner then makes an exaggerated leap in logic and on the basis of the prior art of record by concluding that because the '472 patent also teaches a condensation reaction for producing its silicones, the instantly claimed insulation layer and the silicone of the '472 patent are the same. This could only be true if all condensation reactions utilized the exact same starting components in the exact same relative amounts and if these starting components were subjected to the exact same cure conditions and parameters. For example, a condensation reaction could be utilized to form a linear silicone liquid, a silicone gel, a silicone elastomer, a silicone resin, etc., which all have different physical properties and utilize the same reaction mechanism but with different starting components and reaction parameters.

The Examiner is also failing to appreciate the continuum of transparency, i.e., there are varying degrees of transparency, translucency, and opaqueness. This is clear by the Examiner's assertion that the "colorless" silicone of the '472 patent is interpreted to transmit 100% of light (see page 7 of the Examiner's Answer). The Applicants are not asserting or arguing that the silicone of the '472 patent is necessarily white in an opaque sense of the word. Rather, the Applicants are merely arguing that the term colorless in no way designates transparency having a light transmittance of 80% or greater (as specifically claimed in the subject application), especially in view of the fact "colorless" means an absence of color, not transparency. (see, e.g., Merriam Webster's Dictionary, which defines "white" as being "free from color," *available at* <http://www.merriam-webster.com/dictionary/white>). As set forth in the Applicants' Brief on Appeal, an object

can be translucent yet colorless, or opaque yet colorless, or even colorless and transparent but having a light transmittance of less than 80%.

The Examiner now asserts that “no clear support exists for [the argument that colorless means white.]” (see pages 5-6 of the Examiner’s Reply Brief). This position is counter to all extrinsic evidence, which defines white as being the lack or absence of color, i.e., colorless. Interestingly, despite the fact the Examiner alleges that there is no support for the term colorless meaning white even when abundant evidence points to this very fact, the Examiner asserts, in conclusory terms, that “colorless” necessarily means that the silicone of the ‘472 patent is transparent and, moreover, that the colorless silicone of the ‘472 patent has a light transmittance 100%. The Applicants question how the Examiner arrived at this conclusion, particularly in view of the evidence to the contrary and the Examiner’s failure to cite any reference or source whatsoever which supports this position. Confusingly, the Examiner appears to assume anything that is not expressly taught as being opaque is necessarily transparent (and not only transparent, but capable of transmitting 100% of light). The Examiner’s position relative to transparency not only ignores opaqueness, but it wholly ignores translucency, as well as transparency in which light transmittance is less than 80% (as distinguished from the instantly claimed insulation layer). As but one example, a cloudy insulation layer would likely be referred to as being “colorless,” yet this cloudy insulation layer would be translucent or only mildly transparent (i.e., transparent but having a light transmittance of less than 80%).

Interestingly, the Examiner also points to the fact the solution utilized to form the silicone in the ‘472 patent is clear, and thus opines that the silicone formed therefrom must also be clear (see page 6 of the Examiner’s Reply Brief). Once a silicone becomes

cross-linked, its physical properties are drastically different than those of the solution from which the silicone is formed. In fact, the silicones formed in the '472 patent themselves ranged from "colorless to yellow" despite the fact the silicones of the '472 patent are formed from clear solutions. As such, the '472 patent itself contradicts the Examiner's position. As but one example, the Applicants note that ice is formed from a clear liquid, yet ice is a colorless solid which oftentimes is translucent or even opaque.

The Applicants also note that if the silicone of the '472 patent was indeed "clear" or "transparent," as asserted by the Examiner, it is unlikely the '472 patent would differentiate between the terms "colorless" and "clear." For example, the Examiner even admits that the '472 patent teaches that its solutions are clear, yet the silicones formed therefrom are referred to in the '472 patent as being "colorless." If the silicones of the '472 patent were also clear, it is likely the '472 patent would not utilize a wholly different adjective to describe the appearance of its silicones. This further supports the Applicants' position relative to the fact objects that objects can be colorless yet have a light transmittance of less than 80%, objects can be colorless yet be translucent, and objects can be colorless yet be opaque.

For the reasons set forth above, the Applicants respectfully submit that the '472 fails to disclose, teach, or even suggest, either expressly or even inherently (as improperly presented by the Examiner), an electrical insulation layer comprising a transparent cross-linked silicone body, as specifically claimed in the subject application. As such, the Examiner's rejection under 35 U.S.C. § 102(b) is respectfully traversed. While the Applicants appreciate the Examiner has independently rejected the dependent claims of the subject application, those rejections are not specifically addressed herein.

In view of the foregoing, the Applicants respectfully submit that independent claim 1, as well as the claims which dependent therefrom, are both novel and non-obvious over of the prior art and are therefore allowable, as such allowance is respectfully requested.

The Commissioner is authorized to charge the Deposit Account No. 08-2789, in the name of Howard & Howard Attorneys PLLC for any additional fees or credit the account for any overpayment.

**Respectfully submitted,**

**HOWARD & HOWARD ATTORNEYS PLLC**

February 23, 2011

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